

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF FLEMING-MASON)	
RURAL ELECTRIC COOPERATIVE)	CASE NO.
CORPORATION FOR A CERTIFICATE OF)	97-508
PUBLIC CONVENIENCE AND NECESSITY AND)	
APPROVAL OF ASSOCIATED FINANCING)	

O R D E R

On December 16, 1997, Fleming-Mason Rural Electric Cooperative Corporation ("Fleming-Mason") filed for a Certificate of Public Convenience and Necessity and approval of financing. The application was deficient in several respects and on December 29, 1997, a letter was sent from the Commission's Executive Director's office advising Fleming-Mason of the deficiencies. Additional information was filed on January 15, 1998, but all of the required information was not included. Fleming-Mason was advised of this by letter dated February 9, 1998. Fleming-Mason failed to respond to this letter, so an Order was issued on April 22, 1998 requiring that the information be filed. This information was filed on May 4, 1998, when it was determined that the application met the minimum filing requirements.

Additional information was requested by Order dated June 10, 1998. Responses were received on July 9, 1998. In that response, Fleming-Mason indicated that it only intended to file for a Certificate of Public Convenience and Necessity as the associated

financing had not yet been finalized. Accordingly, responses were provided to questions related to the construction portions only.

Fleming-Mason's 1996-1999 Work Plan indicates that it proposes to spend an aggregate amount of \$9,581,258 between 1996 and 1999 to provide for the construction and operation of additional electric distribution and service lines in its service area, as follows:

REA Code	Description	Cost
100	New Services	\$2,437,705
200	Tie Lines	100,080
300	Distribution Line Conversions	3,071,324
601	Transformers and Meters	2,117,324
602	Service Upgrades	245,700
603	Sectionalizing Equipment	180,615
604	Regulators	139,150
606	Ordinary Replacements	1,117,080
701	Yard Lights	<u>172,280</u>
Total		\$9,581,258

As is common practice among electric utilities, Fleming-Mason supported its proposed construction by providing a voltage drop study. These studies are typically computerized models of their distribution systems. These models allow the utility to simulate the impacts of changes to its distribution system, such as increases in load or changes in facilities and equipment.

If the system is modeled accurately, voltage drop studies can be powerful analysis tools. They allow the utility to identify potential problems before they occur and if it appears that upgrading is necessary, they allow the utility to more quickly perform "what if" studies which in turn allows the utility to more quickly identify the most efficient

solutions. When these models are used effectively, they can improve quality of service and reduce overall costs. Accordingly, the Commission routinely requests that such studies be filed in construction cases.

In order to be effective, the model must be accurate. There are two programs extensively used by distribution cooperatives and the Commission is sufficiently familiar with both to have little concern over the accuracy of the algorithms. However, the accuracy of the model is highly dependent upon the accuracy of the input data, such as conductor size and length. There are various ways that the accuracy of the data could be verified, but the simplest way would be to take measurements at various points on the distribution system and compare these measurements to the results predicted by the model. This does require that the demand on the system at the time the measurements are taken coincide with the demand assumed in the model.

Fleming-Mason indicated that it does take actual field measurements to confirm the accuracy of the model and indicated that the results are very accurate. However, the measurements provided were taken at the substation. As demand is generally modeled by taking substation loadings and allocating these to customer locations, it may be somewhat circular to rely on substation measurements as the only means of confirming the accuracy of the model. Accuracy could be better confirmed by taking measurements at the end of several feeders and comparing these to the results of the voltage drop study. Therefore, the Commission will require that Fleming-Mason's next work plan be supported by actual field measurements taken at the end of at least one feeder for every substation. If measurements are not available at the peak loading used

in the voltage drop study, it is permissible to extrapolate actual voltage to what the voltage would have been at peak load.

The Commission, after consideration of the evidence of record and being advised, finds that:

1. Public convenience and necessity require the construction by Fleming-Mason of the improvements and additions to its system as described in its 1996-1999 Work Plan, and that a certificate should be granted.

2. Fleming-Mason's next work plan should be supported by actual field measurements taken at the end of at least one feeder for every substation. If measurements are not available at the peak loading used in the voltage drop study, it is permissible to extrapolate actual voltage to what the voltage would have been at peak load.

3. Fleming-Mason's application for approval of financing should be dismissed without prejudice.

IT IS THEREFORE ORDERED that:

1. Fleming-Mason's application for a certificate of public convenience and necessity is approved.

2. Fleming-Mason shall provide actual field measurements taken at the end of at least one feeder for every substation to support its next work plan.

3. Fleming-Mason's application for approval of financing is dismissed without prejudice.

Done at Frankfort, Kentucky, this 29th day of September, 1998.

PUBLIC SERVICE COMMISSION

B. J. Helton
Chairman

E. K. [Signature]
Vice Chairman

Darryl W. [Signature]
Commissioner

ATTEST:

[Signature] Helen C. Helton
Executive Director